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ABSTRACT

The Summer Pre-Graduate Research Experience at the University of North Carolina at Chapel Hill (UNC-CH) was established in 1988 for the purpose of contributing to an increase in the number of underrepresented minority students pursuing graduate degrees. Each summer, students convene at UNC-CH to participate in a 10-week summer research program. The students are paired with UNC-CH faculty members who serve as the students research preceptors. The results of an evaluation completed by 96 students show that the majority of participants had positive perceptions of the program, and most felt that it stimulated a desire to pursue graduate studies. (Contains 3 figures and 12 references.) (SLD)

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"What I Did Last Summer": Minority College Students' Perceptions of Their Participation in a Summer Research Program

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The Summer Pre-Graduate Research Experience (SPGRE) at the University of North Carolina at Chapel Hill (UNC-CH) was established in 1988 for the purpose of contributing to an increase in the number of underrepresented minority students pursuing graduate studies. Each summer students convene at UNC-CH to participate in a 10-week summer research program. The students are paired with a UNC-CH faculty member who serves as the student's research preceptor. The results of student evaluations show that the majority of participants had positive perceptions of the program and most felt that it stimulated a desire to pursue graduate studies.

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Despite small incremental progress, the proportion of underrepresented ethnic minorities receiving doctoral degrees continues to remain woefully low. The most recent data from The National Opinion Research Center further demonstrates the state of minorities in higher education. Between 1999 and 2000, there were 41,368 research doctorate degrees awarded in the United States. During this time, the number of minority doctorates increased 2.5% to 4,389. This figure is 25.1% higher than the number of minority doctorate recipients in 1995 (National Opinion Research Center, 2001).

The percentage of African-American and Hispanic doctorate recipients has increased by 3.9% and 0.5%, respectively. However, Native Americans showed a decline in doctorate production from 217 to 169 doctorate recipients. Of the Ph.D.'s granted to minorities between 1999 and 2000, between 51.0% and 65.7% were awarded to women (National Opinion Research Center, 2001). Despite this slight progress, educators, researchers, and policymakers continue to note the significant under-representation of minorities in doctorate granting programs.

The Academe's Response

In response to the shortage of African-American doctorates, some educators have advocated mentoring as a way of increasing the number of undergraduate minority students who continue on to graduate school (Blackwell, 1983; Frierson, 1981). Whereas the general field of mentoring has an extensive empirical base, the literature on mentoring minority undergraduate and graduate students is scarce (Brown, Davis, & McClendon, 1999). Smith and Davidson (1992) report that out of 175 scholarly articles on mentoring published in *Psychological Abstracts*, only 4% of the studies addressed the mentoring of African-American students. The

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available literature on mentoring African-American students, however, indicates that this population is more likely to be excluded from the academic and professional practices and benefits of mentoring relationships. For example, Blackwell (1983) conducted a study on the graduate school mentoring experiences of African-American professionals ranging in age from 24 to 85. He found that more than 87% of the sample did not have a mentor while in graduate school. Furthermore, his results illustrated a positive relationship between having a mentor during a graduate program and successful completion of the degree program.

More current research has shown that no significant increase has occurred in the development of productive models of mentoring for African-American students. In a study of 182 African-American graduate and professional students, Smith and Davidson (1992) found that only one-third of the respondents reported having a mentor. Furthermore, almost one-third of the respondents stated that no faculty or administrative staff had meaningfully assisted them while in graduate school. In a sample of high-achieving African-American undergraduates, Freeman (1999) found that, in most cases, those students had to seek out their own mentors. As a consequence, Freeman argued for the establishment of formal university programs that would link students with supportive and encouraging mentors who would challenge them academically and professionally.

What is Mentoring?

To date, several definitions of mentoring have permeated the literature in this field. In a comprehensive review of mentoring at the undergraduate level, Jacobi (1991) notes that the lack of a widespread operational definition has resulted in a "lack of clarity about the antecedents, outcomes, characteristics, and mediators of mentoring despite a growing body of

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empirical research"(p.505). Observing this discrepancy in mentoring definitions, others in the field have attempted to demarcate the various aspects of mentoring that make it a distinct conceptual process. Haring (1999) maintains that mentoring is "significant career assistance that is given by more experienced person(s) to less experienced one(s) during a time of transition" (p.9). In this regard, Haring advocates that mentoring should be characterized by a concern for the needs of the protégé or mentee during a time of transition from one educational setting to another (e.g. undergraduates to graduate school). Other researchers have simplified the definition of mentoring to include "the giving of advice and passing of messages, but equally important, it involves genuine feelings of goodwill for mentees and for their growth and development" (Freeman, 1999, p.15).

Currently, the most widely used definition of "mentor" is that postulated by Charles Healy (1997). Healy describes mentoring as "a dynamic, reciprocal relationship in a work environment between an advanced career incumbent and a beginner" (p.10). In this respect, the mentoring process is characterized as both reciprocal and encouraging of career development and advancement for both parties involved. Healy argues that the aforementioned definition's emphasis on reciprocity and mutual benefit allows for a more positive and productive mentoring relationship to develop. As a result, this constructive relationship increases the likelihood of a student's timely degree completion.

Beginning in the late 1980's, a number of minority student-oriented summer research programs were created at large research universities (Tyler, 1993). The Summer Pre-Graduate Research Experience (SPGRE) at the University of North Carolina at Chapel Hill (UNC-CH) was established in 1988 for the purpose of increasing the number of underrepresented minority

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students who pursue graduate study. Each summer students from all over the United States assemble at UNC-CH for a 10-week, in-depth, research program. During this time, students are paired with UNC-CH faculty members who serve as their research preceptors. In addition to working closely with their preceptors, students participate in workshops, seminars, and social activities provided by SPGRE program staff, although the majority of the students' time is spent engaged in their research projects. The main goal of the program is to provide the students with experiences that will encourage them to pursue graduate studies, preferably at the Ph.D. level. The intent of this paper is to examine and discuss evaluation outcomes related to the students' perceptions of the program.

In summary, the purpose of the present study is to address the following questions:

- How well and in what ways does the SPGRE program meet initial student expectations?
- How well and in what ways does the SPGRE program foster a positive mentoring relationship between the student and faculty preceptor?
- How well and in what ways does the SPGRE program encourage students to pursue graduate school and/or a research career?
- How do students rate the SPGRE program overall?

Method

Sample

In the summers of 2000 and 2001 ninety-six students participated in the SPGRE program. Ninety-one students completed the end-of-program questionnaire, a response rate of 95%. Of the participants who completed the exit questionnaire, 73% were female (n=66) and 27% were male (n=25). The majority of the respondents (90%) were African American (n=82), with 3% American Indian (n=3), 1% Puerto Rican (n=1), and 4% other (n=4). Students from historically

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Black colleges and universities composed 59% of the sample, 37% of the participants hailed from predominantly White colleges and universities, and 3% attended a historically Native American university. Most of the students (70%, n=64) had completed their junior year and classified themselves as rising seniors. Due to the broad range of student undergraduate majors, majors were grouped into three main categories: the sciences, social sciences, and the humanities. The majority of students were science majors (53%, n=48), with social science following at 36% (n=33), and 10 students reporting humanities majors (11%).

During the last week of the 2000 and 2001 SPGRE programs students completed end-of-program questionnaires as part of the evaluation of the program. The data was analyzed using SPSS for Windows 10.0.

Results

Program Expectations

Students were asked three core questions to assess their expectations of the program, whether they were pleased that they participated, and whether they had a better understanding of what is involved in graduate studies. Forty-four percent of respondents reported that the SPGRE program exceeded their expectations (n=40). Another 48% (n=44) said that the program met their expectations and 7% reported that they were either undecided or their expectations were not met (n=6). The majority of students said they were definitely pleased with their decision to participate in the program (86%, n=78). Eighty-one percent of the respondents indicated that they had a definite understanding of what graduate study entails after being in the program (n=74). One student commented, "I gained so much in the area of advisement and preparation for applying to and getting through graduate school." Another student remarked, "Although I

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don't plan at this point to pursue a Ph.D. this summer allowed me to realize this. Before I was kind of confused. However, the program didn't discourage me, I just learned that it might not be for me."

Mentor Relationship

Students were asked several questions that examined the nature of their relationship with their preceptor. Eighty-two percent of student respondents described their relationship with their preceptor as "very favorable" or "favorable". More than half of the respondents (n=55) classified their personal involvement in their preceptor's research activity as "very favorable" or "favorable". In response to the statement, "Overall I found my relationship with my mentor to be positive and satisfying", 82% of students reported "strongly agree" or "agree". One student stated, "I really enjoyed the program and am pleased that I was placed with such a wonderful mentor." See Figure 1 for the full list of student responses to questions on the mentoring relationship.

Figure 1 goes about here

Pursuit of Graduate Studies/Research Career

Students were asked several questions that explored the impact of the program on their desire to pursue graduate studies. The majority of the respondents strongly agreed that the program had stimulated a desire to pursue graduate studies (78%, n= 71). One student commented, "This program is excellent for undergraduates to gain experience and preparation for graduate school." Forty-three percent of the students polled said that the program encouraged

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an interest in pursuing a research career. Several students noted, "The program was great and I learned a lot about research, along with my strengths and weaknesses." Furthermore, of the students who expressed an interest in pursuing graduate study, over two-thirds (69%) said they would apply to UNC-CH. See Figure 2 for the full list of student responses to questions on graduate study/research.

Figure 2 goes about here

Overall Program

Student opinion of the overall program was determined by questions that assessed student perception of whether the program was worth their time and effort. Seventy-five percent of the students strongly agreed that the program was worth their time and effort. One student remarked, "I really enjoyed my time here at UNC. I think I gained some valuable insight into different disciplines and fields that I might have otherwise written off. " Another student noted, "Overall, I learned a lot this summer about grad school and my career interests. I would recommend this program to others." Students were also asked if they would recommend this program to others. Seventy-three percent of students polled said that they would strongly recommend the program, while forty-six percent rated the program as "very favorable" or "favorable". One student noted, "I strongly believe that the program truly prepares us for graduate school. It is a highly recommended program for me." See Figure 3 for the full list of student responses to questions on the overall program.

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Figure 3 goes about here

Discussion

The under-representation of minorities in graduate education is a dilemma of significant proportions. Although the numbers are increasing slightly, there remains a large segment of minority undergraduate students who are not being exposed to opportunities that enhance their chances of attending graduate school. Mentoring programs are used a tool or strategy for increasing the numbers of minority undergraduate students who continue on to pursue doctoral work. However, students must have positive mentoring experiences for the mentoring relationship to be effective and valuable (Zelditch, 1997).

The main goals of the SPGRE program at The University of North Carolina at Chapel Hill are two fold. First, program staff hope to match minority undergraduates with faculty research preceptors who will assist them in conducting research and engaging in scholarly activities. Second, it is expected that this relationship will encourage and influence the student to go on to graduate school. It would appear from the results of the student evaluation that both goals are likely to be achieved for the 2000 and 2001 cohorts. Overall, the majority of student participants in the SPGRE program reported having a positive and productive relationship with their respective mentor. As previous work has shown (Blackwell, 1983; Frierson, 1990; Freeman, 1999), in order for the mentor/mentee relationship to be productive the student must feel a sense of support, encouragement, and guidance from their mentor. Presumably, students who have a good relationship with their mentor have a more positive outlook on pursuing graduate school and/or a research career.

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The second goal of the SPGRE program is to encourage minority students to pursue graduate work. Once again, from the results of the student evaluation, it seems that the program is likely to meet this goal for the 2000 and 2001 cohorts. More than three out of four student participants reported that their participation in the program stimulated a desire to go to graduate school. Almost half of the students surveyed indicated that the program had encouraged their interest in a research career. Overall, the program met or exceeded the majority of the participants' expectations. Most students were pleased with the program and felt that it was a worthwhile experience. Furthermore, student responses uncovered the utility of the SPGRE program in assisting students in preparing them for the academic and emotional rigor of graduate school.

The results of the student end of program surveys underscore the need for the continuation of research programs that may lead to mentoring experiences and which encourage minority undergraduates to pursue Ph.D. degrees. Although the SPGRE program is short term in length, the relationships between the students and their preceptors are substantive. What the program lacks in temporal breadth, it makes up in research depth. It also provides or builds upon a research foundation that prepares students for graduate studies in research intensive programs.

The present study employed a self-report methodology in the form of a questionnaire. The analysis presented in this study does not delve into differences between the students on various demographic variables. Therefore, future research could examine differences between student participants on variables of gender, type of school attended (HBCU vs. PWI), and major. Additional work could also explore the perception of faculty mentors with regard to the program.

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Figure 1. Student Evaluation of the Mentoring Relationship
(n=91)

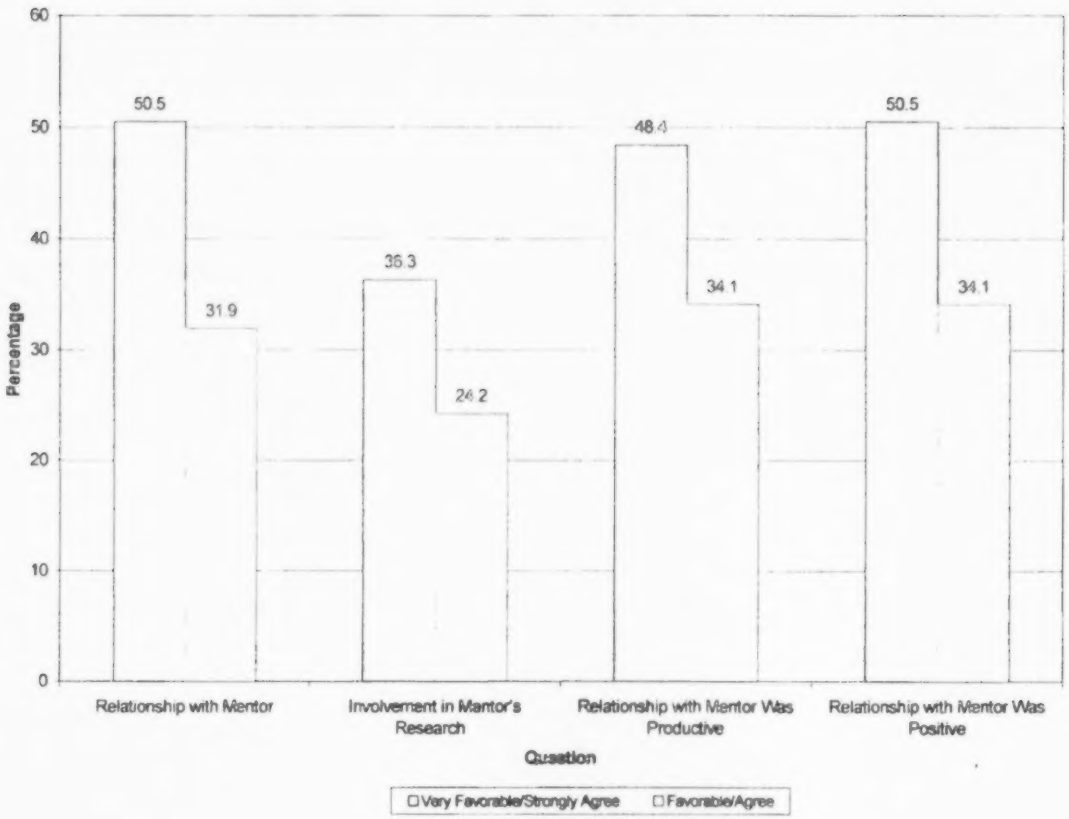

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Figure 2. Student Evaluation of Interest in Graduate Study/Research (N=91)

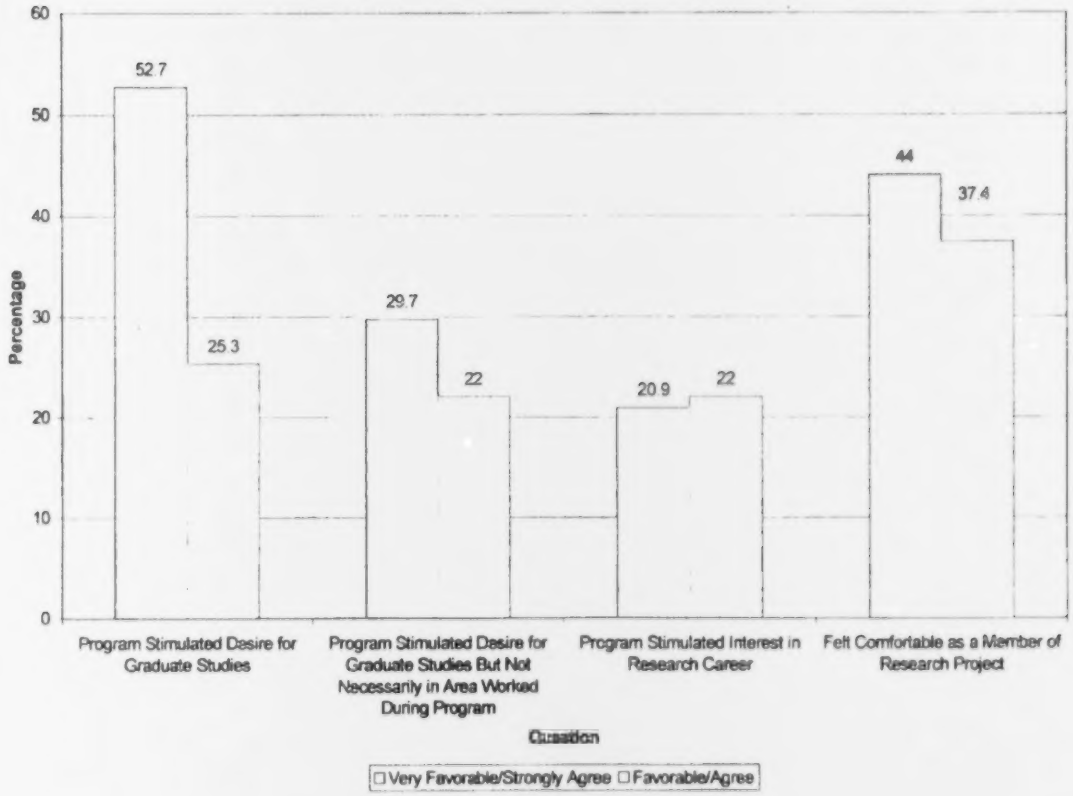

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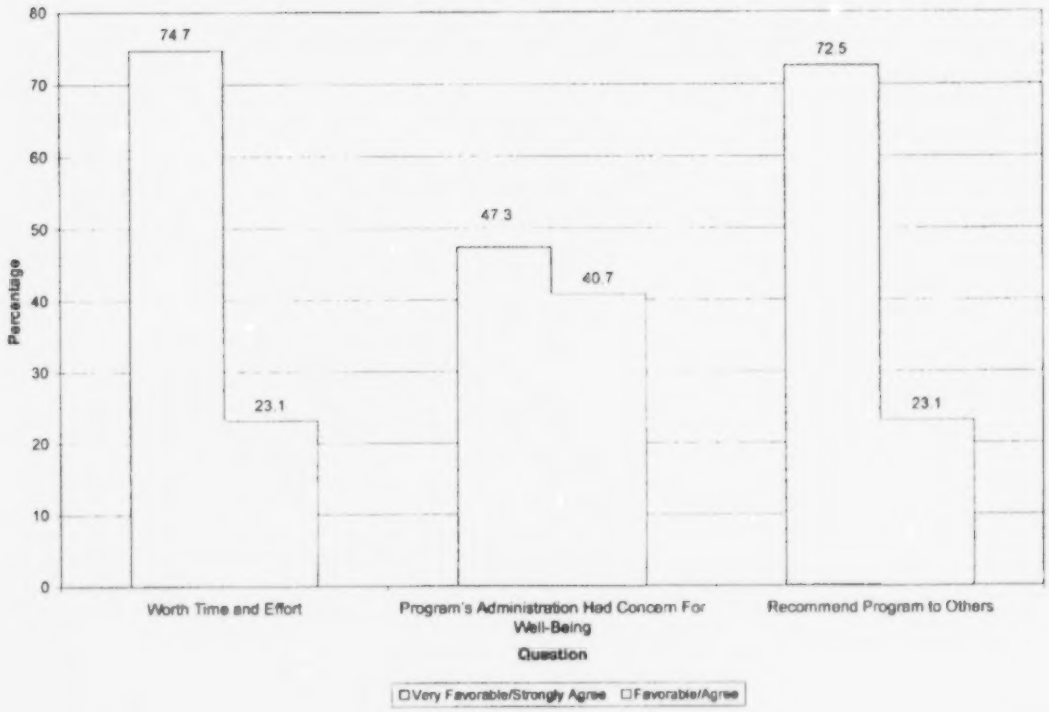
Figure 3. Student Evaluation of the SPGRE Program Overall (N=91)



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